Computer Science
Seminar

Scalable Data Services for Data-Intensive Computing Environments

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Abstract: Future I/O systems for increasingly data-intensive computing environments face a challenging set of requirements. Data extraction must be efficient, fast, and flexible; on-demand data annotation – metadata creation and management – must be possible without modifying application code; and data products must be available for concurrent use by multiple downstream applications (such as visualization and storage), requiring consistency management and scheduling. In this talk, I will present a collection of techniques designed to address these challenges by decoupling data operations in space and in time from core application codes. Our research results show that these techniques can extract data efficiently and without perturbing compute operations, that they can be used to perform application-specific transformations while maintaining acceptable I/O bandwidth and avoiding back-pressure, and that they can decouple "in-band" and "out-of-band" processing to improve overall I/O performance.

Bio:

Patrick M. Widener is a Senior Research Scientist in the Center for Comprehensive Informatics and Research Assistant Professor in the Department of Biomedical Engineering at Emory University. His research interests include experimental systems, I/O and storage software for large-data environments, middleware, and the generation and use of metadata. Dr. Widener received his Ph.D. in Computer Science from the Georgia Institute of Technology in 2005, and prior to beginning his Ph.D. studies he was employed as a software developer by several companies which no longer exist. He also holds a Master of Computer Science degree from the University of Virginia (1992), and a Bachelor of Science in Computer Science from James Madison University (1990).

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Mathematics and Science Center: W301

This seminar was postponed February 12th due to the inclement weather.

Mathematics and Computer Science
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